

ABSTRACT OF THE DISCLOSURE

An apparatus and method for modulating a phase of optical beam with reduced contact loss. In one embodiment, an apparatus according to embodiments of the present invention includes a first region of an optical waveguide disposed in semiconductor material.

- 5 The first region has a first conductivity type. The apparatus further includes a second region of the optical waveguide disposed in the semiconductor material. The second region has a second conductivity type, which is opposite to the first conductivity type. A first contact is coupled to the optical waveguide at a first location, which is outside an optical path of an optical beam that is to be directed through the optical waveguide. A first buffer of insulating
- 10 material is disposed along the optical waveguide between the first contact and the optical path of the optical beam. A buffer plug of insulating material disposed in the optical waveguide on a same side as the first location. The buffer plug is to help direct a mode of the optical beam away from the first location.